



# Ready to Implement? An Exploration of K12 Faculty's Preparedness to Create Inclusive Learning Environments

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Accepted: 11 March 2024  
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## Abstract

Understanding how to create trauma-informed learning environments which can contribute to learner empowerment is the focus of this phase of an ongoing education design research project. As embedding opportunities for social-emotional learning (SEL) competency development has proven to help all students develop a sense of belonging within their educational environments (Cooper, 2014), a classroom climate that promotes these opportunities proves a useful metric by which to define inclusive learning environments. Internal and external factors K-12 faculty perceive as affecting their ability to create inclusive learning environments for increasingly diverse student bodies are examined. Observations are used to understand the extent to which faculty perception informs classroom practice. As K12 teachers are often collaborators in design and implementation of inclusive environments, an understanding of the extent to which these individuals conceptualize terms such as “belonging” is critical.

**Keywords** Belonging · Social-emotional learning · Trauma-informed approach · K12

## Introduction

Too often, instructional design research on the development of inclusive learning environments is grounded in frameworks which seek to universalize the experience of diverse student learners (Meyer et al., 2014) or focus on a deficit-based approach (Navarro et al., 2016). While the former approach can flatten the unique lived experience of diverse learners (Fraser, 1998), the latter can contribute to a reduction in motivation for the individual and a lack of belonging (Laija-Rodriguez et al., 2013) within the classroom community.

In truth, the instructional design and technology (IDT) field has traditionally lacked models which prompt designers to consider how different contexts contribute to an assets-based approach (Stefaniak et al., 2022). Eschewing traditional models, assets-based approaches to instructional design research over the past fifteen years have drawn on

theory and frameworks from outside the field proper, as in Woodley et al. (2017) use of culturally responsive pedagogy to embrace learner's diverse backgrounds or Young's (2008) reinterpretation of a culture-based model. Almost thirty years ago, Dick (1995) cautioned the design field against focusing too heavily on the context of learning environments as if such a focus would distract from rather than contribute to the design of efficient and effective instruction. However, many within the field have begun to question whether research practices (Reeves & Lin, 2020) and design models (Moore, 2021) widely accepted as canonical are still useful in designing solutions to ill-structured problems (Jonassen, 2000) for increasingly diverse audiences. The synthesis of research practices and models from other fields—such as counselor education and trauma-informed pedagogy—can help to expand the IDT field's understanding of how to design learning environments which foster inclusion and belonging.

The origins of a trauma-informed approach (TIA), although outside the IDT field proper, lie within a similar origin point: the American military. In the aftermath of the Civil War, veterans returning home were plagued by ongoing physical and emotional distress, which, at the time, was accredited to the moral weakness of the individual. Understanding of post-traumatic stress deepened over the next

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century, and by the late 1990s, was expanded to include ongoing interpersonal traumas, such as instances of abuse or neglect (Felitti et al., 1998). This expanded definition has led to trauma-informed care within educational settings disproportionately being relegated to the role of school counselors or mental health professionals (Lynch & Klima, 2020). Recently, young learners have been made increasingly susceptible to traditional non-interpersonal traumas, such as global disasters (like the Covid-19 pandemic) and international conflicts (such as the Russian invasion of Ukraine).

Public school systems have struggled to adopt formal frameworks or, indeed, even common definitions of a TIA (Hanson & Lang, 2016; Maynard et al., 2019). Thomas et al. (2019) suggest the intentional design of an environment of belonging can be more empowering for trauma-affected learners than other more explicit interventions. A TIA requires a shift in practice from a deficit model, reframing questions such as “What’s wrong with this learner?” to more supportive and systemic inquiries such as “What internal and external factors are affecting this learner?” (Thomas et al., 2019). This assets-based approach leads to the empowerment of the learner, in which they are then able to act as change agents within their own communities (Sulecio de Alvarez & Dickson-Deane, 2018).

## The Intervention

A specific focus on the creation of inclusive learning environments as a trauma-informed practice which can contribute to this student empowerment guides this phase of an ongoing education design research (EDR) project. Participants within the study, K-12 teachers at a public school district in suburban Philadelphia, had spent the summer prior engaging in a virtual, asynchronous professional learning session on how to leverage social-emotional-academic competencies to create safe, predictable environments of belonging for learners across grade levels. As a final step in assessing their strengths post-training, faculty were asked to comment on their preparedness to create inclusive learning environments according to Freire (1970/2000) praxis of critical consciousness. Within this praxis, individuals are constantly engaged in the co-recognition (with input from students) of what inclusion is for their specific communities, while simultaneously critically reflecting on the extent to which said elements of inclusion have been put into action. The current study, undertaken throughout the school year immediately following the summer training, explored faculty members’ self-identified strengths within this praxis. Classroom observations provided a chance to confirm or dispute the extent to which these strengths were being put into action.

EDR requires practitioners and researchers to come together to collaboratively implement and evaluate the effect

of proposed interventions in authentic settings (Design-Based Research Collective, 2003; Vanderhoven et al., 2016). The current phase explores interventions teacher-practitioners put into place to create inclusive learning environments. Specific interventions were not prescribed; rather teacher-practitioners had the design freedom to intervene as seemed appropriate in each individual learning environment to achieve the overarching goal of improving a sense of belonging. The testing of such design ideas can contribute to both theory and practice (McKenney & Reeves, 2018). The specific research questions guiding this phase were as follows:

RQ 1: How do K-12 faculty conceptualize their own readiness to create inclusive learning environments in accordance with Freirean praxis?

RQ2: In what ways do select faculty participants implement elements of inclusive learning environments?

## Epistemological Approach

Traditionally, IDT research has been conducted with an objectivist approach, seeking to uncover universal truths about how individuals learn (Jonassen, 1991; Moore et al., 2023). However, EDR has been championed by a rising group of relativists (McKenney & Reeves, 2018) who continue to suggest that knowledge is not transmitted but uniquely constructed by the individual (Bruner, 1986; Jonassen, 1991; Schön, 1983). As such, the design of learning environments and resources should be much more attuned to context and collaboration (Jonassen, 1991). Constructivist designers should focus on how the environment can help or hinder learners as they navigate and mediate multiple perspectives of the world in order to create their own understandings (Jonassen, 1991).

EDR generates a fundamentally different type of knowledge than more traditional, objective research (Moore et al., 2023). Whereas traditional researchers reason both inductively and deductively, design researchers reason constructively or abductively (Dorst, 2011; Kolko, 2010). Abductive reasoning leads to an approach that is not empirical in nature but iterative, with designers engaged in both framing, and reframing, the design problem and potential design solutions simultaneously (Dorst, 2011; Svihla, 2018). This process yields results about the theoretical nature of learning thanks to interventions which have been designed with, not for, an audience (Moore et al., 2023).

## Author positionality and district context

Despite being positioned as powerful agents of change (Nelson & Stolterman, 2012), designers often fail to explicitly

acknowledge power and privilege in their research, ignoring the opportunity to discuss how critical facets of their humanity directly affect their practice (Boling et al., 2023). An important element of my (second author's) research agenda is how empathy threads through so much of what makes us designers. Our designer professional identity continues to evolve to where opening ourselves in a responsive way to other's feelings and experiences is the way we design. Our design situations have cultural, societal, socio-economic, political, and educational implications. At first glance, design situations are like trying to turn an aircraft carrier: they take a lot of force, they are slow, and it takes a long time to turn such a large ship with such momentum. Changing situations of inequity, a lack of diversity, and/or non-inclusion involve changes to everything we do every day (Herman et al., 2023; Tracey & Baaki, 2023).

My (first author) entire professional career, like many other women, has been spent in public education which, ideally, prides itself on offering equitable learning experiences to all students within the community—no applications and no rejections, regardless of race, gender, sexual orientation, ethnicity, or belief system. Having spent thirteen years in the classroom, the intermediary role teachers are asked to play in implementing district initiatives for this diverse group of learners, initiatives that may be educationally sound on paper but more difficult to bring to fruition in the complex microcosm of the classroom still resonates. In transitioning from a classroom role to a central administration role, the responsibility once felt for students has begun to inform design practice with my faculty. Those working with learners who themselves have experienced trauma are prime candidates for secondary traumatic stress (Lynch & Glass, 2018; Cieslak et al., 2013). Secondary traumatic stress has been found to severely impact the daily functioning of professionals including chronic fatigue, emotional detachment, existential questioning, and poor work performance (Hydon, 2015). Such trauma has led to the loss of over 300,000 professionals in the 2021–2022 school year alone (Dill, 2022), with women disproportionately making up this loss (Tirrell-Corbin et al., 2023). I can see myself reflected in each of these losses.

As white, native English-speakers, both authors are aware of how we fail to share common lived experiences with all of the 5500 diverse learners of Centennial School District (CSD). Within the past 18 months, the population of CSD students who do not speak English as a first language has more than doubled in size (sitting now just over 500 identified students) with Ukrainian and Russian joining Spanish as languages heard daily in cafeterias and hallways. The majority of the district's Russian and Ukrainian students have been displaced by the trauma of the ongoing Russian-Ukrainian war. Forty-nine percent of CSD's student body qualifies for free and reduced lunch. Importantly, the intersectional

identities of CSD students suggests these data points do not live in isolation but combine in various and unique ways that can layer multiple barriers to feeling included and accepted within a traditional school environment. Indeed, in the wake of the global Covid-19 pandemic, a majority of K-12 learners, regardless of nationality, race, gender, or socioeconomic status are increasingly exhibiting signs of post-traumatic stress disorder (Ma et al., 2021).

Pennsylvania has a regressive funding system for its public schools (Baker et al., 2012), with one of the lowest rates of state contributions to school funding in the United States. Individual taxpayers make up this deficit, which leads to increased disparity in schools' abilities to provide, among other services, mental health resources to help students process the effects of trauma. In Summer 2022, CSD formally adopted an educational equity policy, with the directive that SSD students should be provided with not just equitable access to educational opportunities but also that SSD staff should develop and implement programming to best ensure equitable student success. Three Coordinator positions emerged to lead this equity work— a Coordinator of English Language Learners and Inclusive Practices, a Coordinator of Social-Emotional Learning (SEL), and a Coordinator of Online and Digital Learning (first author). These individuals developed an initial faculty professional development session designed to share our district conceptualization of belonging and how a focus on SEL competency development allowed for the creation of trauma-informed inclusive learning environments. Within this session, a common definition for belonging was established, examples of opportunities for SEL competency development were showcased, and the Freire (1970/2000) name-reflect-act continuum of critical consciousness was introduced.

## Review of the Literature

Existing literature and past practice should be used to verify if a proposed EDR research problem is legitimate, researchable and research-worthy (McKenney & Reeves, 2018). Abductive reasoning is at both the core of design (Dorst, 2011) as well as effective teaching practice (Veen, 2021) and is dependent upon attempts to capture the best possible explanation for what we observe (Veen, 2021). In attempting to abductively reason about what constitutes an inclusive learning environment, conceptualizing terms as nebulous as “inclusivity” and “belonging” can be a helpful first step.

## Belonging in trauma-informed learning environments

Goodenow (1993) defines belonging as a learner's “sense of being accepted, valued, included and encouraged by others (teacher and peers) ... and of feeling oneself to be an important

part of the life and activity of the class. (p.25). While some argue a sense of belonging is a subjective feeling of inclusion within specific contexts (Strayhorn, 2019), there is general agreement that within truly inclusive learning environments, each learner feels support to have autonomy, to be their own authentic self. Inclusivity can be conceptualized as environments in which traditionally underrepresented groups (whether due to gender, ethnicity, race, ability, socioeconomic status or the intersection of these factors) experience belonging (Ainscow and César, 2006; Zhao et al., 2023). Belonging, while having inherent merit of its own, has also proven to be a mediating outcome for student academic success (Chang et al., 2019). These definitions suggest a positive relationship between a student's sense of belonging and a student's engagement in the course. Engagement has emotional, behavioral, and cognitive components (Marks, 2000) with active participation—via both cognitive attention and behavioral participation—being seen as a prerequisite for learning (Finn, 1989). However affective engagement which measures a learner's identification with the learning environment (Finn & Zimmer, 2012) has been found to directly contribute to a learner's motivation which, in turn, contributes to academic participation (Wong & Liem, 2022; Zumbrunn et al., 2014).

Ongoing trauma can affect a student's ability to create the types of relationships which promote belonging and connectedness in the learning environment (Pate, 2020). When experiencing trauma, individuals often struggle with self-regulation, choosing flight or fight as a neuro-biological response to emotional stress (Perry, 2006). Efforts to cognitively engage students who are struggling to regulate will often fail unless an environment of safety and belonging have been previously established (Greenwald, 2005). Such a process is directly related to the biology of the brain (see Fig. 1). Effort must be taken to create safe and supportive environments, allowing students to feel socially and emotionally connected enough to begin diverting attention to cognitive processes.

As K12 teachers are often collaborators in design and implementation of inclusion interventions (Carlgrén, 1999;

Konings et al., 2005; Persico et al., 2018), an understanding of the extent to which these individuals conceptualize terms such as “inclusivity” or “belonging” is critical. A focus on social-emotional learning (SEL) competency development can aid in the creation and maintenance of inclusive learning environments (Brackett et al., 2010; Sutton, 2004).

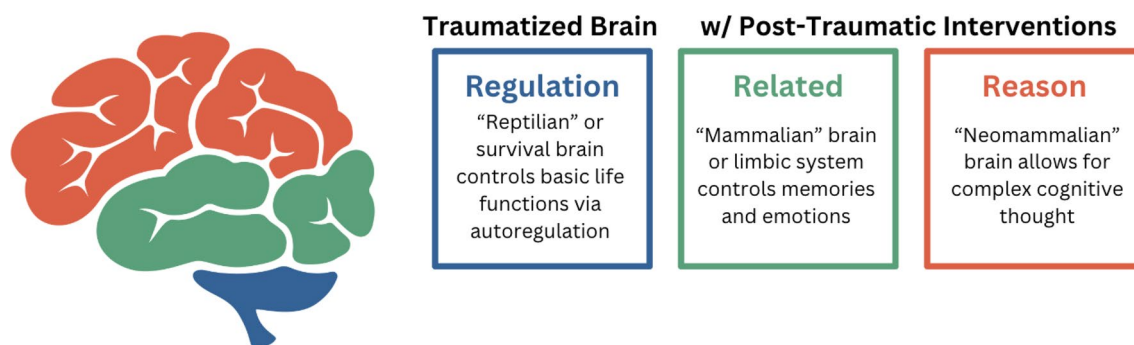
### Addressing trauma via SEL

Embedding a trauma-informed approach (TIA) into the domains of SEL is common practice for public school systems across the nation (Thomas et al., 2019), which have not, by and large, adopted formal frameworks of a trauma-informed approach (Hanson & Lang, 2016; Maynard et al., 2019). Opportunities for SEL competency development can be explicit, as in lessons that specifically allow students time to reflect on their own abilities to self-regulate, or implicit, such as a focus on teacher-student relationships that balance student autonomy with clear boundaries (Marzano et al., 2003). Students are most likely to feel belonging when concrete SEL strategies are used consistently by teachers throughout their classrooms, administrators throughout their buildings, and the district as a whole within all of its functional areas (Taylor et al., 2017).

The Collaborative for Academic, Social, and Emotional Learning (CASEL) provides districts with a walkthrough-protocol to look for elements of inclusive learning environments. This tool supports a strengths-based approach by focusing on feedback and development of progress instead of evaluation. Five classroom components are considered for an inclusive learning environment (see Table 1).

### Examining trauma and belonging via Freirean Praxis

Freire (1970/2000) theory of critical consciousness suggests members of an organization have the responsibility to



**Fig. 1** Potential of Trauma to Affect Brain Biology. Note. Three “R” model is adapted from Perry’s (2006) approach to trauma-informed intervention

**Table 1** Elements of Inclusive Classroom Environments

Element	Look for/ Learn about
Teacher- Student Relationships	<ul style="list-style-type: none"> <li>- Each student is addressed by name</li> <li>- Appropriate responses to each students' needs</li> <li>- Positive teacher language</li> <li>- Affirmation of student efforts</li> <li>- Students sharing their perspectives, voices, concerns</li> </ul>
Cultural Responsiveness	<ul style="list-style-type: none"> <li>- Teachers learning about/ demonstrating knowledge of students' cultures, backgrounds, talents and interests</li> <li>- Student experiences and identities reflected in classroom materials, curriculum, and/or instruction</li> <li>- Posted student work which reflects their identities, cultures, and experiences</li> <li>- Students of all subgroups actively engaged in classroom activities</li> </ul>
Classroom Routines and Procedures	<ul style="list-style-type: none"> <li>- Classroom activities are introduced through consistent transitions</li> <li>- Predictable routines and procedures</li> <li>- Routines and procedures are not overly restrictive and allow for student autonomy and self-regulation</li> </ul>
Student-centered discipline	<ul style="list-style-type: none"> <li>- Strategies and tools are available for students to problem-solve and self-manage</li> <li>- Verbal and non-verbal cues communicate and promote expected behaviors</li> <li>- Desired behaviors are positively reinforced</li> <li>- Non-desired behaviors are discreetly redirected</li> </ul>
Community building	<ul style="list-style-type: none"> <li>- Opportunities are provided for students to connect with each other</li> <li>- Physical space is set up to foster community</li> <li>- Co-constructed classroom agreements are posted</li> </ul>

The above is adapted from CASEL's (2022) SEL Walkthrough Protocol

collaboratively question, analyze, and challenge dominant viewpoints for any patterns (both conscious and unconscious) which could perpetuate systems of inequity and exclusion. Essential to any approach ground in critical consciousness is an established end goal of action, in which inequitable environments are redesigned for the mutual benefit of all members. Being able to name what inequity looks like and reflect on the extent to which it permeates existing systems are two other critical and interrelated components of Freirean praxis (see Fig. 2).

### Name

Recognition that all students have a right to belonging and inclusion within their classrooms just as they are, can be considered a critical first step when engaging in an assets-based TIA. For faculty creating these learning environments, being able to specifically name what is meant by inclusion and belonging is a necessary precursor to transformational change and, more importantly, the right of all participants within the system (Freire, 1970/2000). Suggesting only administrators have the right to set vision for faculty to implement or only teachers have the right to set vision for the classroom community to implement will only lead to the illusion of the successful creation of inclusive environments. Furthermore, opportunities to clarify misrecognition (Fraser, 1998), in which diverse student groups may be asked to

forsake inherent components of their identity to be included in learning spaces should be examined and addressed.

### Reflect

Inherent within the successful naming of the cooperatively developed end vision of what an inclusive environment should look like is the opportunity to critically reflect on where gaps in the current status quo exist. Freire (1970/2000) advocates the need for ongoing dialogue to facilitate the transformative process; however admits that dialogue struggles to emerge without time spent in critical reflection (p.92).

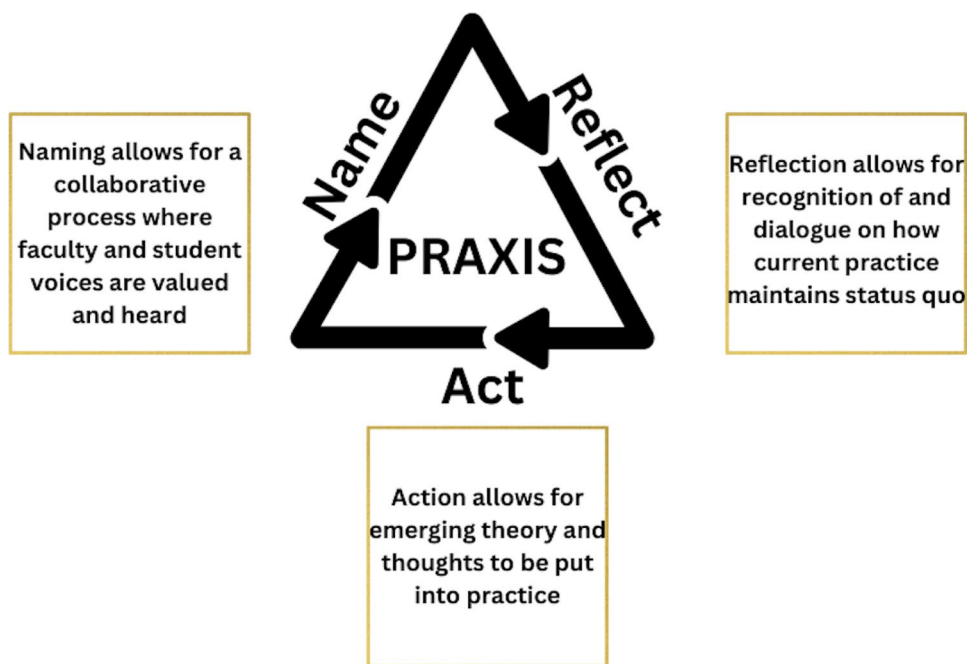
### Act

The process of reflection and action should be simultaneous and ongoing. In wanting to design a perfectly inclusive environment, the design team can become lost in iterations of reflection and dialogue without ever taking action (Herman et al., 2023). However, reflection has been repeatedly shown to contribute to a design team's ability to move forward in an iterative design process (Stefaniak et al., 2022; Tracey & Hutchinson, 2016). Action that takes place alongside critical reflection and dialogue is much more likely to succeed (Freire 1970/2000).

While results from the current study are shared in discrete stages for organizational purposes, it would be erroneous



Fig. 2 Freirean Praxis



to characterize Freirean praxis as dichotomous or hierarchical. Critical reflection is a form of action as is working collaboratively to name injustice in order to transform it (Freire, 1970/2000).

## Methodology

Education design research (EDR), like other design-based research methods, involves studying flexible iterations of designed interventions in a naturalistic context (Hoadley & Campos, 2022). As such, EDR projects are often too large in scope to fully report in a single manuscript; breaking EDR projects into phases can help continue to show the value of the research project over time (Christensen & West, 2018). In proposing educational design research as a viable research method for studying and improving educational practice, McKenney and Reeves (2018) suggest three overarching orientations to inquiry: 1) research for interventions; 2) research on interventions; and 3) research through interventions. A complete EDR project will reflect on each orientation at some point; within the larger project, individual phases will often emphasize one orientation over others (McKenney & Reeves, 2018). This phase focuses on *research on interventions*, with a desire to generate knowledge about the extent to which specific interventions used to create inclusive learning environments were effective. This phase takes a strength-based approach by considering K-12 faculty as co-designers in the creation of these interventions within their specific contexts. The research questions guiding this phase were as follows:

RQ 1: How do K-12 faculty conceptualize their own readiness to create inclusive learning environments in accordance with Freirean praxis?

RQ2: In what ways are elements of inclusive learning environments being implemented by select faculty participants?

A strength-based approach values the skills, potential and knowledge of self-inherent in study participants (Pattoni, 2012). As such, this study first seeks to center the voices of K-12 faculty. However, focusing on strengths does not mean areas of challenge or struggle should be ignored or necessarily reframed as strengths (Pattoni, 2012). Helping faculty to understand where practice differs from their perceptions of their abilities to create inclusive learning environments is a goal of this study.

## Data collection for initial analysis and exploration phase

### Learning artifact- Discussion board

Initial data was collected via an asynchronous discussion board tool (Padlet) as part of a required faculty professional development session. This professional development session was entitled “How it all fits together: A look at brain science, belonging, SEL, and digital learning” and was conceptualized as a way to communicate how multiple district initiatives aligned to support the newly adopted district equity policy. Based on individual faculty assignment, faculty may have previously received siloed training in one or more

of these initiatives; this was the first time all faculty were exposed to explicit alignment among initiatives. Previous training in use of the discussion board tool had been provided. While faculty were encouraged to interact with each other on the discussion board, professional development facilitators chose not to interfere.

### Discussion board participants

Participants were 194 K-12 faculty employed in a suburban public school district in the Northeast. Eighty-eight participants held teaching assignments at the primary level (Grades K-5); 82 participants held teaching assignments at the secondary level (Grades 6–12). The remaining 24 participants were full-time district professional staff, such as instructional coaches and mental health counselors, who worked with students at multiple levels (Grades K-12). While all faculty ( $n=452$ ) were required to participate in the discussion board for summer professional learning requirements within the district, additional permission was granted by participants who agreed have their posts analyzed and categorized.

### Discussion board data analysis

As a final response to the professional development session, faculty were asked to place themselves on the Freirean (1970/2000) continuum of name—reflect—act to represent how ready they felt to implement equitable practices within their own classrooms or purview. Faculty reasoning and rationale were copied from the discussion tool, anonymized, read individually, and then discussed among the research team. The name—reflect—act continuum allowed for a “pre-figured coding” (Crabtree & Miller, 1992, p.151) approach initially; however under these three pre-figured codes, additional sub-codes were added as they emerged. From these prefigured and emergent codes, six major themes emerged. Furthermore, analysis of this learning artifact led the research team to commit to following-up faculty perceptions with faculty practice via a series of classroom observations.

### Data collection for follow-up analysis and exploration phase

#### Classroom observations

A secondary round of data collection involved classroom observations utilizing a participant as observer approach (Bogdewic, 1999). Observations were facilitated using Section One of the Collective for Social, Emotional, and Academic Learning (CASEL)’s walkthrough protocol (see Review of the Literature section). Section One is focused on classroom climate and practices and is further broken down to prompt observers to look for evidence of positive

teacher-student relationships, cultural responsiveness, predictable classroom routines and procedures, student-centered discipline, and community-building. Although this tool is designed to be evaluative, faculty were not given a final score; rather, Section One components simply provided guidance on indicators to look for in environments designed to support student belonging.

### Observation participants

Having already defined the school district as a single instrumental case, purposeful sampling (see Creswell & Poth, 2018) was utilized to select individual faculty who had varied responses on the original asynchronous discussion board. Altogether, 20 observations were conducted, with attention given to visit classrooms at the same frequency as which self-identifications occurred. As such, thirteen observations occurred in classrooms where faculty self-identified at the naming level; four occurred in classrooms where faculty self-identified at the reflection level; two occurred in classrooms where faculty self-identified at the acting level. The final interview occurred in a classroom where the faculty member had been on sabbatical the previous summer and had not taken part in the summer professional learning.

Due to student privacy concerns, all observations took place at the secondary level (Grades 7–12). At least two observations were conducted across each subject area: English, Math, Science, Social Studies, World Language, and electives (Business, Art, Physical Education, etc.) Each observation lasted at least 45 min and included at least one transition period (either students entering or departing the classroom.) Faculty were informed of observations, via email, at least 24 h in advance and were allowed to reschedule or opt-out.

Observations took place during the month of February. In a modified block schedule, this means that students had completed midterms for full credit classes more than three weeks prior to observation and were not in a cycle of test prep or any other atypical schedule. Students in half credit courses had been attending said classes for at least three weeks and, theoretically, should have had time to internalize any new classroom routines and at least begin establishing a classroom community.

### Observation data analysis

Field notes from observations were anonymized and summarized as soon as possible following each observation, maintaining the initial categories set forth by the CASEL walkthrough protocol. Early in the observation process, an additional category emerged to be added to both observation tool and subsequent field note summaries: expressed desire for an increased focus on adult SEL within the complex

subsystems which comprise a school district. Summaries from early observations were checked for validity with the school's SEL Coordinator, a CASEL fellow, to ensure valid interpretation of the CASEL walkthrough protocol.

Observation instruments often default to summarizing the observation via one total score, placing teachers along a single dimension of efficacy (Ho & Kane, 2013). While the focus of these observations was on efficacy of interventions over efficacy of individuals, it still was almost immediately apparent when reflecting on field notes that individual interventions lived across the Freirean continuum as opposed to residing in a single dimension. As such, more care was given to analyze actions following the outcome of interventions (i.e. what the classroom community did next).

## Results

### RQ 1: How do K-12 faculty conceptualize their own readiness to create inclusive learning environments in accordance with Freirean praxis?

Of the 194 participants, 113 self-identified as being at a naming level of equity implementation post-professional learning, meaning they had a better understanding of our district's conceptualization of the term equity but were not yet sure how it applied to their purview. Forty-five participants self-identified as reflecting, in which they were ready and able to critically examine their capacity for their role in an equity implementation plan. The remaining 36 participants self-identified as ready to act and were able to provide concrete implementation steps within their own classrooms or contexts. For an overview of how faculty self-identified and what themes emerged at these stages, see Table 2.

While results are shared in discrete stages for organizational purposes, it would be erroneous to characterize Freirean praxis as dichotomous or hierarchical. Critical reflection is a form of action as is working collaboratively to name injustice in order to transform it (Freire 1970/2000).

### Naming stage- Maslow before Bloom

By far, the most frequent emerging theme from the initial discussion board was the acknowledgement and agreement that students cannot be expected to engage in the cognitive processes necessary for learning if they don't feel a sense of belonging within their school environments. Both physiological and social elements of safety were repeatedly mentioned as necessary components of an equitable and inclusive learning environment. Faculty (at both the elementary and the secondary levels) often made reference to Maslow (1943; 1987) by name:

*I believe most conscious, reflective educators understand the value of this content. In essence, it's a component of Maslow's Theory and those who teach with a constant awareness of the hierarchy already are, and will continue to implement these practices.*

Furthermore, the creation of these environments was understood as a prerequisite to any other scholastic endeavor. One elementary faculty categorized the relationship between social-emotional learning and academic learning as follows (emphasis in original):

*The biggest take away for me is the focus on each child's SAFETY. We must make it a priority to make each child feel physically, socially, and emotionally safe so they have a real sense of BELONGING in our classrooms and schools. These needs must be a priority and need to be met before we can expect any academic success.*

Several faculty members expanded their audience to include themselves and colleagues, suggesting that both students and adults within a learning environment require feeling safe and being valued if they are to perform (emphasis in original):

*Students need to feel physically, emotionally, socially, mentally, and academically safe in order for learning to truly take place. It's important to keep THIS the main focus when I am feeling the pressure that comes with teaching and that hopefully the efforts that I make*

**Table 2** K-12 Faculty Preparedness to Create Inclusive Learning Environments

Freirean Stage	Number of Participants	Emerging Theme
Naming	113	Classroom environments should be safe spaces which prioritize belonging, repeatedly described as the idea that students need "Maslow" before they can "Bloom."
Reflecting	45	The selves we bring to inclusion work at the beginning of the school year may be different from the bandwidth we have for such initiatives midyear, described by one teacher as a need to "honor our February selves."
Acting	36	Intentional or purposeful front-end design decisions for the arrangement of physical space and opportunities for student interactions are key to creating inclusive learning environments



*to try to accomplish this for my students is also shown from admin to their staff.*

Alongside reminders of the importance that faculty as well as students need to feel safe and valued at their daily workplace was the acknowledgement that the creation of such a culture was the responsibility of all members of our school team.

### Reflecting stage- Honoring our “February Selves”

Despite increased feelings of expertise among those at a reflecting level, a common theme of the need for self-acceptance when initial implementation attempts went awry permeated discussion. A secondary faculty presented the analogy of the July teacher, well-rested and fully able to engage in professional development, as ready and eager to move from reflection to implementation. This was contrasted with the February teacher, all but worn out from dealing with the myriad curveballs that accompany any school year, and subject to feelings of failure that they were unable to build the equitable learning environment he had envisioned short months ago. This visual resonated with colleagues across grade levels who posted about needs for “acceptance” and “grace” as we moved from discussion and reflection towards implementation.

*I feel like I’ve been given the grace to acknowledge that this [creating environments of belonging in digital spaces] is a continual process and not an end goal...*

Faculty often paired the potential for error alongside thoughts of using digital tools to implement environments of belonging. A desire to ensure our fully virtual students benefited from equitable learning experiences permeated reflections. This was coupled with the acknowledgement that creating belonging in online spaces continued to be more difficult than creating belonging in-person. This sentiment was expressed at both by individuals who work across grade bands:

*I feel confident moving forward in with DEIB and SEAL. The digital aspect is an area that is more challenging...*

And the secondary level:

*I feel confident that I can incorporate DEIB and SEAL into my daily teaching practices. An action that I would like to incorporate into my lessons are finding ways to incorporate digital tools that can be used to improve student voice and choice.*

Across grade levels faculty reflected that more time, resources, and research would be beneficial to their ability to move from reflection to implementation.

### Acting stage- Intentional front end design

Faculty in the naming stage were able to recognize the importance of creating a safe and welcoming culture prior towards engaging in academic learning; faculty in the acting stage started to provide concrete ways in which to create this environment. Whereas responses from previous stages seemed relatively balanced by faculty from both elementary and secondary grade bands, at the acting stage, elementary faculty became effusive with ideas for creating belonging inside the classroom. Increasing “student talk” dominated many of these ideas from providing designated time for students to engage in small-group discussions several times throughout the day to allowing student voice and choice in curriculum decisions. Nonverbal opportunities for student feedback—such as feelings charts or thumbs-up/thumbs-down tickets for students to use in reaction to lessons were also shared. Elementary faculty continuously used terms such as “intentional” or “conscious” to describe their approach to planning lessons that would support belonging.

Because observations were limited to secondary level classrooms, this split in implementation confidence is especially relevant. Despite their lack of sharing in our summer professional development discussion, all secondary faculty observed did exhibit elements of intentional actions taken to create inclusive learning environments.

### RQ2: In what ways do select faculty participants implement elements of inclusive learning environments?

Observing how self-identification translated into teaching practice was a second goal of this study. Although observations were selected based upon faculty self-identification during the professional learning session, use of the adapted CASEL walkthrough protocol reinforced the idea that faculty operate within a constant Freirean continuum as opposed to living solely in a discrete phase. Furthermore, while specific elements of the protocol were observed being implemented across initial faculty self-identification ratings, intention or outcome of those implementations varied. For example, while all observations included evidence of teachers calling students by name, regardless of initial self-identification level, the effect of how practice interaction supported or distracted from community building varied. Table 3 shares examples of observed interventions, organized by faculty’s initial self-identification within a specific Freirean stage. This visualization is not intended to suggest that all examples in the acting column are more inclusive intervention choices or that faculty were not observed across the continuum; rather to provide support to the finding that similar interventions can have different implementation effects.

**Table 3** Examples of Observed Interventions Organized by Self-Identification

	Name	Reflect	Act
Teacher Student Relationships	Transition times (beginning/ end of class; transitions between tasks) are utilized to provide space for students to share ideas and concerns Prior students interrupt class to visit and are welcomed in; focus on current class is pulled	Prior students interrupt class to visit and are sent on way; focus on current class is maintained	Prior students utilize transition times (before bell) for brief greetings
Cultural Responsiveness	Real-world examples are shared relevant to student populations Faculty identified students from subpopulations to observation team; no relevant real-world examples were included in content	Faculty did not identify students from subpopulations to research team; faculty highlighted when real-world examples were relevant to specific students or groups within class (i.e. “for those of you who play Varsity sports...”)	Faculty did not identify students from subpopulations to research team; students were prompted for opportunities to share real-world relevance
Rules and Procedures	Predictable routines surrounding student assignments exist Assignments follow strict deadlines OR assignment deadlines are not provided even when students inquire	Faculty provides a window of flexibility for assignment submission	Students help to set flexible deadlines for when work will be submitted
Student-Centered Discipline	Students self-regulate the use of cell phones and technology Students do not follow faculty directive to put phones away OR faculty does not provide this directive and students fail to self-regulate	Students follow faculty directive to put phones away during direct instruction; phone use is resumed when direct instruction ends	Students self-regulate phone use without directive; phones are not observed during direct instruction and are used sparingly when direct instruction ends
Community Building	Students interact based on shared classroom agreements and procedures Student choice (i.e. in new seats) leads to a breakdown in class structure and procedure Physical space fosters community Environment is adjusted for space as a whole (i.e. music is playing loudly or lights have been significantly dimmed)	Individual students interact during application time to reteach each other concepts	Students help to run class by co-creating response order or passing out class materials Environment has not been adjusted
Prioritizing Adult SEL (added component)	Faculty vocalize their own needs in addition to those of students Faculty do not introduce observer to class. Faculty justify individual student behavior to observer (i.e. “it’s normal for her to have her head down”)	Faculty introduce observer to class as guest	Faculty introduce observer to class as part of the learning team

Just as teachers did not exist in discrete stages of the Freirean continuum, observed behaviors also often overlapped multiple elements of the adapted CASEL walk-thru protocol. For example, teachers repeatedly used the transition time between the beginning of classes to deepen *teacher-student relations* both with current and previous students. Several ( $n=6$ ) teachers across all three initial self-identification levels were observed to greet each student by name at the door and demonstrate knowledge of *students' lived experiences* outside of class, asking about extracurricular activities. The transition surrounding the close of class was often conceptualized as a cushion time for *student-centered discipline*. Teachers verbally acknowledged they had built the last 5–10 min of class as a “buffer time” to accommodate the working pace of all students. Students were also afforded this time to check in with personal technology (i.e. cell phones) which may or may not have been utilized throughout class and to prepare themselves and their materials for the shift to their next class.

Within the limited schedule of the classroom teacher's day, transition time between classes can also be the only time a teacher has to *attend to their own adult needs*, whether biological or social-emotional. Teachers who utilized transition times for their own bathroom breaks or as a quick decompression of a previous session often felt the need to apologize or explain their actions. Fourteen observations, limited to teachers who self-identified at the naming or reflecting levels, included teachers expressing the importance of opportunities for the development of the adult community within the school system. For some, these were characterized by reflections on the explicit professional development offered by the school district. Some teachers found this explicit PD to be helpful in reconceptualizing opportunities for their own students to experience belonging; others identified the content of the PD as “trite” within a system they did not feel was prioritizing adult inclusion.

## Discussion of Findings

Three related findings emerged from this study- a reinforced awareness that we must name– reflect– act in constant flux (as opposed to discrete stages), the importance of prioritizing adult SEL alongside student SEL to be truly inclusive, and a realization that recommending inclusive interventions may prove ineffective unless intention and effect are discussed in tandem. These findings have implications for both future practice and future research.

Whereas a reflection board in which faculty are asked to self-identify preparedness in creating environments of belonging reduces the discussion to a “prepared/ unprepared” binary, classroom observations reinforce Freire

(1970/2000) that being able to name-reflect-act to combat non-inclusive environments occurs simultaneously as opposed to in discrete stages. Observations allowed for confirmation that faculty who had self-identified at a naming level had taken some actionable steps towards creating inclusive classroom environments, whether through learning all students' names or attempting to manipulate the learning environment via sound, scent, or lighting. From a trauma-informed perspective, the failure to create inclusive environments prevents students from moving past a regulation phase (Perry, 2006), effectively robbing the class of the time provided when in a cognitive phase (Gieringer et al., 2023). All faculty, regardless of initial self-identification, were taking actionable steps to moving students past a regulation phase; however implementation and outcome of intervention showed varied rates of success.

Perhaps most important in a study on interventions was the finding that intent and implementation may be more worthy of study than actual intervention. Instead of a checklist of effective interventions utilized by teachers who excel at creating inclusive learning environments, this study found that teachers who are both strong and weak in this practice often utilize similar strategies. However, the effect of these interventions can differ wildly. Calling students by name is not necessarily effective in creating student–teacher relationships, especially if it is utilized in isolation without any other effort made to understand students' lived experiences. The relationship between intent and intervention should be examined at all phases of instructional design models which center culture (Thomas et al., 2002). Intention with the design field has also previously been tied to the need to act (Herman et al., 2023), suggesting that while naming and reflecting on what inclusive culture looks like, it is only by putting inclusive interventions into action that our praxis can improve. This study suggests the inverse to also be true– action without first defining what inclusion looks like and constant critical reflection on the effects of inclusive interventions can also lead to practice which is less than effective.

This study also raises an increased appreciation of how inclusive environments must be built at all levels of a system. Directives to build inclusive learning environments for students will not be effective without also considering how to make faculty and staff within the school system feel included. Previous literature has asked what resources K12 learners use to support their sense of belonging, whether in-person or online (Barbour, 2022). When asked to implement environments that promote belonging, many teachers equally looked for channels of support. Most teachers appeared very aware of whether or not they felt as though administration teams were doing everything they could to model the creation of environments of belonging for teaching staff. Additionally,

teaching faculty sometimes expressed frustration that efforts to promote belonging among their classes actually resulted in worse feedback from administration observations which suggested their learning environments were no longer “academic enough.”

### Implications for Future Practice

Findings from this study have implications for professional practice at multiple levels of a public school system, including both the individual classroom and district-wide level. Individual teachers are going to continue to cycle through the name-reflect-act stages when being asked to create inclusive learning environments with each new semester or year bringing a new group of students who may experience belonging in disparate ways. While third-party SEAL curriculums or training can continue to support teacher practice, an assets-based approach to teacher’s abilities to create these environments themselves should also be espoused. Previous literature on teachers as designers suggests a deficit-approach in which teachers lack problem-solving skills (Koehler et al., 2019) or need support (Ma et al., 2018; Svihla et al., 2015) to be able to engage in effective learning design. However, when it comes to the design of inclusive learning environments, teachers are, by-and-large, able to use the abductive reasoning skills at the core of design (Dorst, 2011) to create some value for their students.

Districts must support faculty by creating inclusive learning environments for adults within the system. One way districts can support both students and faculty is in navigating the politicization of such terms as “cultural responsiveness.” The benefits of a culturally responsive classroom on both students’ social-emotional sense of belonging (Darling-Hammond et al., 2020; Muhammad, 2020) as well as academic learning outcomes (Aronson & Laughter, 2016) have been previously documented. Supporting faculty to become more culturally responsive demonstrates a district commitment to prioritizing the creation of environments of belonging for employees as well as students.

At the most macro-level of the system, state evaluations should be open to the inclusion of evidence of faculty ability to create inclusive learning environments. Faculty who are distinguished in such practice should be celebrated as much as faculty who help students grow academically, via both informal channels, such as during faculty meetings, as well as formal channels, such as state evaluations.

### Implications for Future Research

Results pointing towards the need to differentiate between interventions and intention behind or implementation of said

interventions has implications on focus of research within the instructional design field. While research on interventions allows for continued measures of efficacy and efficiency, research on designer intention demands further research into designerly thinking (Cross, 2023; Smith & Boling, 2009). Understanding how designers use abductive reasoning to iteratively frame problems and solutions has been discussed theoretically (Palmer & Choi, 2023; Svihla, 2020); the current study suggests the field would benefit for a deeper exploration of where designer intention intersects with problem and solution framing, especially in real-world contexts.

Findings also have implications for future research across learning modalities. Increasingly, K-12 learning environments are incorporating digital experiences (Bond, 2020; Yuen et al., 2019). However, a recent review of trauma-informed curriculum used with pre-service teachers lacked any specific mention of how to design for or deliver trauma-informed instruction via digital learning experiences (Hobbs et al., 2019). This need is particularly concentrated at the K-12 level, with almost all previous studies on belonging in technology-enhanced environments taking place at the postsecondary level (DiGiacomo et al., 2023; Romero-Hall, 2017).

Understanding how teachers transfer conceptualizations of belonging to technology-enhanced learning environments is a goal of a future phase of this ongoing EDR project. Previous research suggests the design of digital resources requires a different skill set than that of traditional instructional materials (Moorhouse & Wong, 2022; Wang, 2021). Many of the elements teachers currently use in their in-person design of inclusive learning environments may not seamlessly transfer to digital learning experiences. As learning moves increasingly online, such needs may be exacerbated. For example, this study found that transition times during in-person learning were found to be common times for students and teachers to make connections. However, in fully online learning environments, transition times are often student-directed. Teachers of fully online K-12 learners may need to find alternate methods for providing opportunities for student–teacher connection.

### Conclusion

Where previous studies have focused on areas where teachers lack design skills (Koehler et al., 2019) or need support to be able to engage in design (Ma et al., 2018; Svihla et al., 2015), this study utilized an assets-based approach to center teachers as co-designers of inclusive learning environments. Teacher participants were provided training in how SEL competencies can provide a trauma-informed framework to increase student sense of belonging. Self-rating of readiness to implement such interventions along a Freire (1970/2000) “name-reflect-act” continuum was examined

and confirmatory observations were held with select faculty. While all faculty exhibited signs of being able to enact interventions to contribute to increased student sense of belonging, further research into how teacher-designer intention drives success of intervention is needed.

**Data Availability** The data that support the findings of this study are available from the corresponding author, KH, upon reasonable request.

## Declarations

**Conflict of Interest** There are no known conflicts of interest. This research was conducted under IRB review from Old Dominion University.

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